

# The Body Perfect Ideal and Eating Regulation Goals: Investigating the Role of Adolescents' Identity Styles

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**Abstract** Adolescents are exposed to images depicting the thin or muscular ideal almost on a daily basis. When the body perfect ideal is adopted, adolescents are at increased risk for developing unhealthy and disordered eating behaviors. The aim of the current 3-wave longitudinal study among adolescents ( $N = 418$ ; 54 % girls) was to investigate whether different styles of identity exploration (i.e., information-oriented, normative, and diffuse-avoidant) are associated differentially with changes in adoption of the body perfect ideal, which, in turn, would relate to changes in appearance-focused and health-focused eating regulation. Results indicated that the information-oriented style predicted decreases and the normative style predicted increases in adoption of the body perfect ideal. In turn, adoption of the body perfect ideal predicted significant increases in appearance-focused eating regulation but not in health-focused eating regulation. A diffuse-avoidant style was unrelated to changes in adoption of the body perfect, yet directly predicted decreases in health-focused eating regulation. Theoretical and clinical implications of these findings are discussed.

**Keywords** Identity · Thin-ideal internalization · Body perfect · Eating regulation · Adolescence

## Introduction

Adolescence is a transitional life period during which youngsters learn to think and decide more independently from their parents, thereby attempting to choose a clear and personal direction in life (Steinberg and Morris 2001). A central developmental task during this period involves the construction of a solid and stable identity (Erikson 1968). One important feature of identity development is the selection of goals and values that constitute one's identity (Soenens and Vansteenkiste 2011). The goals adolescents can pursue vary from including building close relationships with peers, contributing to society (e.g., through youth movement or volunteer organizations) to gathering the most up-to-date technological gadgets. One goal that is particularly emphasized in current western society is the pursuit of a physically attractive body (e.g., Slater et al. 2012). Looking attractive is highly valued and standards for beauty have become extreme and unattainable for most people (Dittmar 2007). Indeed, sociocultural messages that are spread through television and magazines encourage women to be extremely thin, whereas men are encouraged to develop a lean and muscular body (Ricciardelli and McCabe 2004; Slater et al. 2012). Adolescents do not only differ, however, in the type of goals they adopt (i.e., the "what" of identity) but also in the style they use to explore and construct their identity (i.e., the "how of identity") (Berzonsky et al. 2003). Importantly, recent research shows that the what and the how of identity development are not orthogonal and that adolescents' identity styles are predictive of the type of goals they adopt (e.g., Berzonsky et al. 2011; Duriez et al. 2012). Against the background of this research, it can be argued that, depending upon their identity style, youngsters might be more or less likely to buy into the sociocultural encouraged goal of physical attractiveness.

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The message spread by consumer culture is that the attainment of the body perfect ideal (i.e., the thin-ideal for women and the muscular ideal for men) is key to a successful and happy life (Evans 2003). The majority of adolescent girls, but also an increasing percentage of boys, indicate that they regulate their food intake to change their appearance (Cafri et al. 2005; Davison et al. 2000). Unfortunately, eating regulation can be a risk factor for disordered eating (Polivy and Herman 1985; Stice 2001). Recent studies have found that adolescents' eating regulation can be driven by different goals that relate differentially to disordered eating (Verstuyf et al. 2012b). Specifically, when eating regulation is driven by the goal to alter one's appearance, it relates to extreme weight loss behaviors and disinhibited eating. In contrast, such associations were not found when eating regulation is driven by the goal to become healthier (Putterman and Linden 2004; Verstuyf et al. 2012b). Given these findings, it seems particularly important to investigate antecedents of appearance-focused eating regulation. The aim of the present contribution was to examine whether adolescents' style of exploring different identity options (Berzonsky 1990) would render adolescents differentially prone for adopting the body perfect ideal, which, in turn, would relate to appearance-focused eating regulation. Although it has been argued at the theoretical level that problems during identity development might be implicated in the adoption of the body perfect ideal and disordered eating behaviors (e.g., Dittmar 2007), little empirical work has been undertaken that bridges the identity literature with the literature on adoption of the body perfect ideal and eating regulation. This was precisely the broader aim of the present contribution.

#### The Process of Identity Exploration: Identity Styles

Several aspects of one's identity can be discerned (Suh 2002), including one's relational, collective (e.g., ethnic) and personal identity (Vignoles et al. 2011). In the present contribution we focus on personal identity development. In the literature on personal identity development, two frameworks have attracted a lot of attention, that is, Marcia's identity status paradigm (Kroger et al. 2010; Marcia 1966) and Berzonsky's identity styles model (Berzonsky 1990; Berzonsky and Adams 1999; Berzonsky et al. 2011). In the identity status paradigm, four identity statuses are distinguished based on the combination of two central dimensions of identity development, that is, adolescents' exploration of different possible identities and adolescents' commitment to certain goals or values. Although this paradigm has been very valuable in the study of identity development in adolescence (for a review, see e.g., Kroger et al. 2010), it has been criticized for its primary focus on the outcome rather than the process of identity

development (van Hoof 1999). To deal with the criticism, Berzonsky and Adams (1999) focused more on the dynamics and processes underlying identity exploration. Specifically, Berzonsky's model addresses the question how identity is explored, constructed, changed, and maintained. Berzonsky (1990) distinguished between three social-cognitive styles that describe how adolescents explore identity-relevant information, how they deal with personal problems, and eventually make identity-relevant choices. First, the *information-oriented* identity style is characterized by an active and critical approach to identity-relevant information. Adolescents relying on this style explore a wide range of values and goals and gather as much information as possible before deciding on which goals are prioritized. Because of their active exploration and their openness for change, they tend to regularly evaluate their chosen identity and, if necessary, they accommodate it. Individuals adhering to this identity style typically define themselves in terms of personally held goals and values (Berzonsky et al. 2003). The result of such an approach is a coherent, differentiated, and relatively flexible identity (Soenens et al. 2005).

Second, adolescents making use of the *normative style* rely primarily on others when dealing with identity-relevant information. Rather than actively exploring which goals matter to them personally, they conform to expectations and norms of significant others or groups. Normative individuals tend to define themselves in terms of collective considerations, such as family, religion or nationality (Berzonsky et al. 2003). They typically ignore or suppress any identity-relevant information that is incongruent with socially expected goals and values (e.g., Soenens et al. 2005). Instead, they assimilate identity-relevant information into already existing self-representations. The result of such an identity style is a firmly held, yet, rather rigid and undifferentiated identity (Pittman et al. 2009).

Finally, the *diffuse-avoidant* style is characteristic of adolescents who tend to avoid making identity-related decisions. Youngsters with a diffuse-avoidant style avoid and procrastinate engagement in thorough identity-related exploratory work. They postpone to gather information and to take a decision until they are forced by the situation. As a result, their choices are generally dictated by external circumstances rather than by internally valued goals. In other words, no stable commitments to goals and values are made and choices and behaviors vary from situation to situation in a chameleon-like fashion (Berzonsky and Ferrari 1996). Commitments held by adolescents with a diffuse-avoidant style, if any, are volatile and are quickly accommodated to shifting situational circumstances. The result of this identity style is a rather diffused identity status (Berzonsky et al. 2011; Pittman et al. 2009). Because of this diffusion, external or social indicators of identity,

such as reputation, popularity and impression management, become more important (e.g., Berzonsky 1990).

Previous research indicated that the identity styles are differentially related to well-being and adjustment. For instance, the information-oriented style is associated with active coping, a sense of meaning in life, and personal well-being (Pittman et al. 2009; Soenens et al. 2005). The normative style is usually unrelated or positively related to personal well-being, yet also to more problematic interpersonal orientations, such as prejudice and relational aggression (Duriez and Soenens 2006; Smits et al. 2011; Soenens et al. 2005). Finally, the diffuse-avoidant style has been related to indicators of ill-being (e.g., depressive symptoms, Nurmi et al. 1997) and to problem behaviors (e.g., conduct disorders, Adams et al. 2009). The relation between the identity styles and eating behaviors has not been studied systematically in previous research. Nevertheless, there are reasons to assume that each of these three identity styles can relate differentially to individuals' body image and eating behaviors.

#### Identity Styles and Dynamics of the Body Perfect Ideal

##### *The Body Perfect Ideal as a Substitute for an Identity Vacuum: The Diffuse-Avoidant Style*

The diffuse-avoidant style seems most directly relevant to the dynamics of adopting the body perfect ideal. For instance, it has been argued by a number of scholars that problematic eating behaviors might develop in the face of an identity vacuum. Wheeler and colleagues (Wheeler et al. 2003, p. 406) stated that "... the obsessive concern with weight and food issues in disordered eaters provide a means to help the vulnerable young women to evade the effort to define the goals and values of a self-directed identity in a world where she perceives no support for doing so". Empirical research investigating this hypothesis is scarce. A handful of studies have found cross-sectional associations between feelings of identity confusion (Schupakneuberg and Nemeroff 1993; Vartanian 2009; Weinreich et al. 1985) or the diffuse-avoidant identity style (Wheeler et al. 2001, 2003) and disordered eating behaviors, specifically bulimic and binge-eating pathology. These findings suggest that binge eating behaviors may be used as a way to cope with the identity vacuum individuals may experience. These findings are also in line with Berzonsky's argument that diffuse-avoidant individuals often exhibit impulsive behaviors and use maladaptive emotional coping strategies to release the tension they face (Berzonsky and Ferrari 1996).

In a similar way, individuals with a diffuse-avoidant style might adopt the body perfect ideal as a way to cope with the identity vacuum they experience (Vartanian 2009). In current society, youngsters are exposed to a staggering

amount of commercials telling them that being physically attractive should be a central life goal (e.g., Dittmar 2007; Slater et al. 2012). Although it is recognized that most people are influenced by this continuous exposure to some extent, it also has been argued that especially more vulnerable youngsters might internalize or adopt the body perfect ideal in an effort to define themselves (e.g., Dittmar 2007). Rather than going to a thorough process of soul-searching and identity-exploration, these youngsters would pursue the extreme body perfect ideal in the hope that the attainment of this ideal would bring them the desired success and happiness (e.g., Evans 2003). To date, only one cross-sectional study has examined the association between identity development and adoption of the body perfect ideal. Vartanian (2009) found that low self-concept clarity, which refers to the extent to which self-definitions are unstable and ill-defined, related to the adoption of the thin-ideal which, in turn, was associated with body image concerns and dieting behaviors. In men, no evidence was obtained for the association between a lack of self-concept clarity and adoption of the muscular ideal, although adoption of the muscular ideal predicted body image concerns and dieting behaviors among men in a similar way as adoption of the thin-ideal predicted body image concerns and dieting behaviors among women.

##### *When Others' Opinion Matters the Most: The Normative Style*

Although the normative identity style has, to our knowledge, not been investigated in relationship to adoption of the body perfect ideal, there are reasons to assume that also this style is related positively to adoption of the body perfect ideal. Dieting behaviors aimed at meeting societal ideals regarding attractiveness have become part of our cultural identity (Bacon et al. 2005). Therefore, individuals with a normative identity style—who tend to follow societal norms and expectations—might be especially eager to endorse the body perfect ideal. In line with this, Duriez et al. (2012) reported in a three-wave longitudinal study bidirectional associations between the normative identity style and the pursuit of extrinsic goals, such as image, financial success, and fame (Kasser and Ryan 1996). The goal of pursuing the body perfect ideal closely resembles the extrinsic goal of physical attractiveness and image (Verstuyf et al. 2012a), as defined within Self-Determination Theory (SDT; Kasser and Ryan 1996; Ryan and Deci 2000). Much like the appeal of extrinsic goals lies in the anticipated power, social approval or self-esteem that would result from attaining them (Kasser et al. 2004), the pursuit of the body perfect ideal is embedded in the anticipation of feelings of success, self-esteem, and social approval (Engeln-Maddox 2006). Therefore, we expected

that the normative style would be predictive of increases in adopting the body perfect ideal.

#### *A Critical Look at Society: The Information-Oriented Style*

Much like for the normative style, no previous studies have investigated directly the association between the information-oriented style and adoption of the body perfect ideal and eating regulation. There is, however, indirect evidence available suggesting that this style might be a protective factor against adoption of the body perfect ideal and appearance-focused dieting goals. First, intervention studies have shown that girls who were taught to take a more critical stance towards the thin-ideal were less likely to adopt this ideal which, in turn, protected them against body image and dieting concerns up to 3 years after the intervention (e.g., Stice et al. 2011a, b). Second, a few correlational studies have focused on general self-determination, which reflects the regulation of one's behavior on the basis of one's own interests and personally held values and goals and which is related to the information-oriented identity style (Soenens et al. 2011). These studies found that general self-determination can function as a buffer against sociocultural pressures to be thin and thin-ideal adoption (Kopp and Zimmer-Gembeck 2011; Pelletier et al. 2004a, b). In addition, in an experimental study, Mask and Blanchard (2011) showed that, after being exposed to the thin-ideal, women low in general self-determination perceived more pressure to be thin, more body dissatisfaction and more concerns over quantity of eating, whereas women high in general self-determination only reported more concerns over the quality of eating. Consistent with this small body of work, we also expected that adolescents with an information-oriented style would be less likely to adopt the body perfect ideal over time.

#### Adoption of the Body Perfect Ideal and Eating Regulation

The association between adoption of the body perfect ideal and dieting behaviors is well-established. A large number of methodologically and culturally diverse studies have demonstrated that adopting the thin-ideal is a risk factor for subsequent dieting behaviors in girls and women (Stice et al. 1998, 2000; Thompson and Stice 2001). Compared to the numerous studies investigating the thin-ideal in women, far fewer studies have investigated the role of adoption of the muscular ideal in dieting behaviors for men. Results of these studies are more mixed (Cafri et al. 2005), which is in part due to the different characteristics of the body perfect ideal for men. Whereas sociocultural messages suggest that women have to be thinner, men have to be more muscular and lean (Cafri et al. 2005), which may lead them to focus

on both losing weight to become thinner and gaining weight in order to gain more muscles. Appearance-focused eating regulation can serve both goals, such that men might engage in fasting periods as well as in episodes of increased eating to gain weight. Previous studies suggest that adoption of the muscular ideal is indeed related to a pattern of eating behaviors in men that is more diverse compared to women (i.e., both weight-loss and weight-gain strategies) (Cahill and Mussap 2007; Vartanian 2009).

Importantly, most previous studies investigated the relationship between the body perfect ideal and quantity of dietary behaviors as an outcome. However, debate exists about the dangers and possible benefits of dieting (e.g., Westerberg-Jacobson et al. 2012). Whereas some studies found positive relationships between quantity of dieting and disordered eating (e.g., Westerberg-Jacobson et al. 2010), other studies showed that dieting resulted in lower levels of overeating and bulimic symptoms (e.g., Burton and Stice 2006; Groesz and Stice 2007). Given these mixed findings, some studies (e.g., Verstuyf et al. 2012b) explored the question whether some types of eating regulation were less detrimental than others. In this context, it has been shown that eating regulation was more beneficial when focused on maintaining or improving health. For instance, two studies found that girls who successfully lost weight especially used healthy methods such as eating more fruit and vegetables and exercising (Boutelle et al. 2009; Westerberg-Jacobson et al. 2012). Similarly, other studies found that appearance-focused goals for eating regulation were associated with binge eating symptoms and unhealthy weight control behaviors, whereas health-focused eating regulation had no such associations with disordered eating (Putterman and Linden 2004; Verstuyf et al. 2012b). Therefore, rather than focusing on the quantity of eating regulation as such, we differentiated between health-focused and appearance-focused eating regulation as outcomes.

#### The Present Study

The primary aim of the present study was to investigate whether identity styles would predict changes in adoption of the body perfect ideal which, in turn, would predict changes in appearance-focused and health-focused eating regulation. To address this research aim, we used a 3-wave longitudinal study with annual assessments. All hypotheses were tested using structural equation modeling (SEM). To ensure temporal precedence in the assessment of the three sets of constructs (i.e., identity styles, body perfect ideal, and eating regulation goals), they were each assessed at different time points. To provide an additionally conservative test of our hypotheses and to ascertain that identity styles would predict changes in the other constructs, we

controlled for T1 levels of adoption of the body perfect ideal when predicting adoption of the body perfect ideal at T2 and we controlled for T2 levels of eating regulation goals when predicting T3 eating regulation goals.

Using the above design, we addressed the following three hypotheses. First, we expected that the three identity styles would relate differentially to changes in adoption of the body perfect ideal, with the diffuse-avoidant and the normative styles predicting increases (Hypothesis 1A and 1B) and an information-oriented style predicting decreases (Hypothesis 1C) in adoption of the body perfect ideal. Second, we expected that adoption of the body perfect ideal would predict an increasing focus on appearance-focused, relative to health-focused, eating regulation (Hypothesis 2). Finally, we explored whether structural relations were similar among male and female adolescents using multi-group SEM (Hypothesis 3).

## Method

### Sample and Procedure

Adolescents from Grade 7 to Grade 10 of a secondary school in Flanders (Belgium) were invited to take part in the study. Parents provided informed consent for their children to participate in the study. Paper and pencil questionnaires were handed out to the adolescents, which were filled in at school in the presence of a research assistant and one teacher. Approximately 1 and 2 years later, the adolescents were invited to participate a second and third time. Answers were connected through a unique personal code, generated during the first participation, to ensure confidential treatment of the data.

At Time 1, 418 adolescents participated in the study. Their age ranged between 12 and 17 years (mean age = 13.58 years; 45.7 % male). At Times 2 and 3, 263 (62.9 % response rate) and 259 (62 % response rate) adolescents, respectively, participated again. Overall, 100 adolescents participated at one single wave, 114 adolescents participated at two waves, and 204 adolescents participated at all three moments in time. Little's Missing Completely At Random Test (Little 1988) turned out to be non-significant (normed  $\chi^2$  of 1.06;  $<2$ ), suggesting that the incomplete data are likely to be missing at random. Under such conditions, Full Information Maximum Likelihood (FIML) is the most appropriate way to deal with the missing data in SEM (Enders and Bandalos 2001). The FIML approach uses information of all cases to compute the parameter estimates. To ensure that no bias emerged because of the FIML approach, analyses were repeated with the 204 adolescents who participated at all three measurement moments. This analysis yielded nearly identical parameter estimates as the ones reported here.

## Measurement Instruments

### Demographic Variables

Participants reported their age, gender, educational level and height and weight. Educational level referred to the type of education (i.e., whether participants followed the general, technical, or vocational track). Most participants were in the general track (71 %), followed by the technical track (27 %), and vocational track (2 %). Based on self-reported gender, age, height and weight, adjusted BMI scores were calculated using the Flemish Growth Charts (Roelants and Hauspie 2004). The adjusted BMI scores at Time 1 varied between 69.27 and 163.72 (Mean = 99.98; SD = 13.39). The vast majority of participants (80.70 %) were within the healthy weight range, with 9.8 % of them being underweight and 6.3 % being overweight (3.3 % missing). The demographic variables were assessed at each time point.

### Identity Styles

Participants completed the Identity Style Inventory-Version 4 (ISI-4; Smits et al. 2011) at Time 1. Items were scored on a 5-point Likert scale, ranging from 1 (*strongly disagree*) to 5 (*strongly agree*). The ISI-4 has 3 subscales tapping into the three identity styles, that is, the information-oriented style (7 items, e.g., “When facing a life decision, I try to analyze the situation in order to understand it”), the normative style (8 items, e.g., “I strive to achieve goals that my family and friends hold for me”), and the diffuse-avoidant style (9 items, e.g., “Many times, by not concerning myself with personal problems, they work themselves out”). Cronbach's alpha was .74, .64, and .70 for the information-oriented, normative and diffuse-avoidant style, respectively, which is similar to previous research (Smits et al. 2011).

### Adoption of the Body Perfect Ideal

Three items of the Internalization Subscale of the Socio-cultural Attitude Towards Appearance Questionnaire-3 (SATAQ-3; Thompson et al. 2004) were used to assess women's recognition and acceptance of societal approved standards of appearance at Time 1 and 2. An example item is: “I would like my body to look like the models who appear in magazines”. An adjusted version was used for male participants, in which wording referring to “thinness” or “thin women” were reframed as “muscularity” or “muscular men” (see also Vartanian 2009). Each item was rated on a 7-point rating scale, ranging from 1 (*completely disagree*) to 7 (*completely agree*). Cronbach's alphas were



.80 and .72 at Time 1 and .92 and .95 at Time 2 for girls and boys respectively.

### Eating Regulation Goals

An adapted version of the Aspiration Index (AI; Kasser and Ryan 1996) was used to measure participants' goals for eating regulation (Verstuyf et al. 2012b) at Time 2 and 3. Two types of goals, that is, the intrinsic goal of physical fitness and health (3 items) and the extrinsic goal of physical appeal and beauty (3 items) were assessed. After reading the stem "I regulate my food intake because...", participants indicated on a 7-point Likert scale ranging from 1 (*not at all important*) to 7 (*very important*) how strongly they valued each of the goals for regulating their eating behavior at Time 2 and 3. Example items referring to health-focused and appearance-focused eating regulation were, respectively, "because I want to keep fit" and "because others would find me more attractive". Across time points and genders, Cronbach's alphas varied between .81 and .87, with an average of .84.

## Results

### Preliminary Analyses

Table 1 presents descriptive statistics and bivariate correlations among the study variables. As can be noted, significant negative relationships emerged between participants' age and the information-oriented and normative identity style and body perfect adoption at T1. Adjusted BMI was significantly positively associated to appearance-focused eating regulation at Time 2 and 3. Inspection of the correlations between our study variables revealed that an information-oriented style was associated positively with health-focused eating regulation at T2 and T3. The normative and diffuse-avoidant styles were associated positively with body perfect adoption at T1. Finally, body perfect adoption at T2 was associated positively with health-focused and appearance-focused eating regulation at T2, but only with appearance-focused eating regulation at T3.

To control for the potentially confounding effects of age and educational level, all indicators of the measurement model were regressed on these background variables and the residual scores were used as indicators in the measurement model. Adjusted BMI was entered as a time variant control variable in the structural model by allowing correlations between adjusted BMI at each time point and the study variables at the same time point and by allowing paths from adjusted BMI at each time point to the study variables of the next time point. Finally, gender was included as a control variable in the structural model and, in an additional set of

analyses, was tested as moderator variable of the structural path.

### Primary Analyses

#### Measurement Model

We first created and inspected the quality of the measurement model representing the study variables as latent variables. The three identity styles were indexed by three randomly created parcels (Little et al. 2002). Body perfect adoption at T1 and T2, and health-focused and appearance-focused eating regulation at T2 and T3 were represented by their respective items. Factor loadings of repeated measures were set equal over time. Fit indices used to evaluate model fit were the  $\chi^2$  test, the root-mean-square error of approximation (RMSEA), the standardized root-mean-square residual (SRMR), and the comparative fit index (CFI). Combined cut-off values of .06 or lower for the RMSEA, and .09 or lower for the SRMR are considered a good model fit (Hu and Bentler 1999). In addition, a CFI with values of .90 or higher reflects an acceptable fit (Bentler 1990). Our measurement model had a good fit to the data,  $\chi^2(294) = 482.551$ ,  $p < .001$ , RMSEA = .05, SRMR = .05, and CFI = .93. The factor loadings of the indicator variables ranged from 0.54–0.94, all  $ps < .001$ .

Next, we tested whether the assumption of time invariance of our measurement model would hold by comparing the measurement model in which factor loadings of the latent constructs were constrained to be equal over time with the measurement model in which factor loadings of the latent constructs were allowed to vary over time. Two indexes of time invariance, that is, the difference in CFI ( $\Delta\text{CFI} < .01$ ) and difference in  $\chi^2$  statistic ( $\Delta\chi^2 = ns$ ) were examined (Byrne and Stewart 2006; Cheung and Rensvold 2002). The fit of the constrained model did not significantly differ from the fit of the free model ( $\Delta\chi^2(6) = 9.03$ ,  $ns$ ) with the  $\Delta\text{CFI}$  being lower than .01 ( $\Delta\text{CFI} = .001$ ), indicating time invariance of our measurement model.

Finally, we performed a multi-group CFA to examine the measurement equivalence across male and female participants by constraining the factor loadings of each latent construct to be equal, while freeing intercepts and error variances. The fit of the constrained model did not significantly differ from the free model ( $\Delta\chi^2(16) = 23.48$ ,  $ns$ ), with the  $\Delta\text{CFI}$  being lower than .01 ( $\Delta\text{CFI} = .002$ ). Hence, measurement equivalence can be assumed across both genders.

#### Structural Models

In the first structural model, we examined the associations between the three identity styles at T1, adoption of the body

**Table 1** Correlations, means and standard deviations between the study variables

Time												MEAN (SD)	
	1	2	3	4	5	6	7	8	10	11	Boys	Girls	
1	1. Age										13.59 (1.17)	13.58 (1.27)	
	2. Adjusted BMI	.08	1								100.15 (11.49)	99.87 (14.87)	
	3. Information-oriented style	-.14*	-.06	1							3.84 (0.56)	3.91 (0.54)	
	4. Normative style	-.12*	-.06	.19***	1						2.93 (0.52)	2.81 (0.55)	
	5. Diffuse-avoidant style	-.05	.03	-.10*	-.30***	1					2.87 (0.61)	2.67 (0.65)	
	6. Adoption body perfect	.10*	.07	-.00	.10*	.20**	1				2.93 (0.77)	2.82 (0.87)	
	7. Adoption body perfect	-.01	-.06	-.10	.10	.09	.39***	1			1.90 (0.96)	2.21 (1.01)	
	8. Health-focused eating reg.	.03	.01	.14*	.02	-.00	.15*	.14**	1		5.33 (1.85)	5.26 (1.34)	
	9. Appearance-focused eating reg.	.11	.30***	.01	.07	.11	.30***	.34***	.50***	1	4.06 (1.61)	4.24 (1.63)	
	10. Health-focused eating reg.	-.11	.10	.18**	.07	-.13*	.04	.11	.40***	.20**	5.11 (1.45)	5.29 (1.31)	
	11. Appearance-focused eating reg.	.01	.30***	.06	.01	.01	.30***	.29***	.28**	.51***	4.04 (1.61)	4.47 (1.52)	

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ 

perfect ideal at T2 and appearance-focused and health-focused eating regulation at T3. In doing so, we controlled for adoption of the body perfect ideal at T1 and for health-focused and appearance-focused eating regulation at T2, which allowed us to examine changes over time. Further, adjusted-BMI at T1, T2 and T3 and gender were entered as control variables. Fit indices indicated a good fit;  $\chi^2(403) = 658.211$ ,  $p < .001$ , RMSEA = .05, SRMR = .08, CFI = .92. Gender and adjusted BMI had significant associations with several of the latent variables in the structural model. Male participants scored higher on the normative identity style ( $\beta = -.15$ ,  $p = .05$ ), whereas female participants scored higher on adoption of the body perfect ideal at T2 ( $\beta = .12$ ,  $p = .05$ ) and on appearance-focused eating regulation ( $\beta = .13$ ,  $p < .05$ ). Further, adjusted BMI had high stability over time ( $\beta = .81$  and  $.84$ ,  $p < .001$ ) and changes in adjusted BMI were associated positively with changes in health-focused ( $\beta = .43$ ,  $p < .001$ ) and appearance-focused eating regulation ( $\beta = .35$ ,  $p < .001$ ).

Hypothesis 1A was not confirmed; the diffuse-avoidant style did not predict changes in body perfect adoption at T2 ( $\beta = -.16$ ,  $ns$ ). In line with Hypothesis 1B and 1C, an information-oriented style predicted significant decreases in body perfect adoption ( $\beta = -.21$ ,  $p < .01$ ), whereas a normative style predicted significant increases in body perfect adoption ( $\beta = .26$ ,  $p < .05$ ).

In line with Hypothesis 2, body perfect adoption at T2 predicted significant increases in appearance-focused ( $\beta = .18$ ,  $p < .05$ ) but not in health-focused eating regulation ( $\beta = .04$ ,  $ns$ ). Further, the indirect effects of the information-oriented and normative style on appearance-focused eating via body perfect adoption were tested through a Sobel  $t$  test. Both indirect effects were marginally significant;  $b = .05$ ,  $p = .06$ , for the normative style and  $b = -.04$ ,  $p = .07$ , for the information-oriented style.

Further, we tested for direct effects between the identity styles and changes in the eating regulation outcomes beyond body perfect adoption. One additional significant path emerged in which a diffuse-avoidant style at T1 predicted significant decreases in health-focused eating regulation at T3 ( $\beta = -.23$ ,  $p < .01$ ). This final model had a good fit to the data;  $\chi^2(399) = 676.328$ ,  $p < .001$ , RMSEA = .05, SRMR = .08, and CFI = .93.

Finally, a multi-group comparison was tested to investigate potential structural differences between male and female participants. In line with Hypothesis 3, the constrained model, in which structural paths were set equal between boys and girls, did not result in a significant worse fit compared to the unconstrained model in which factor loadings were allowed to vary between male and female participants ( $\Delta\chi^2(36) = 44.70$ ,  $ns$ ;  $\Delta CFI = 0.004$ ,  $< .01$ ). Therefore, the final model, presented in Fig. 1, can be considered invariant across gender.

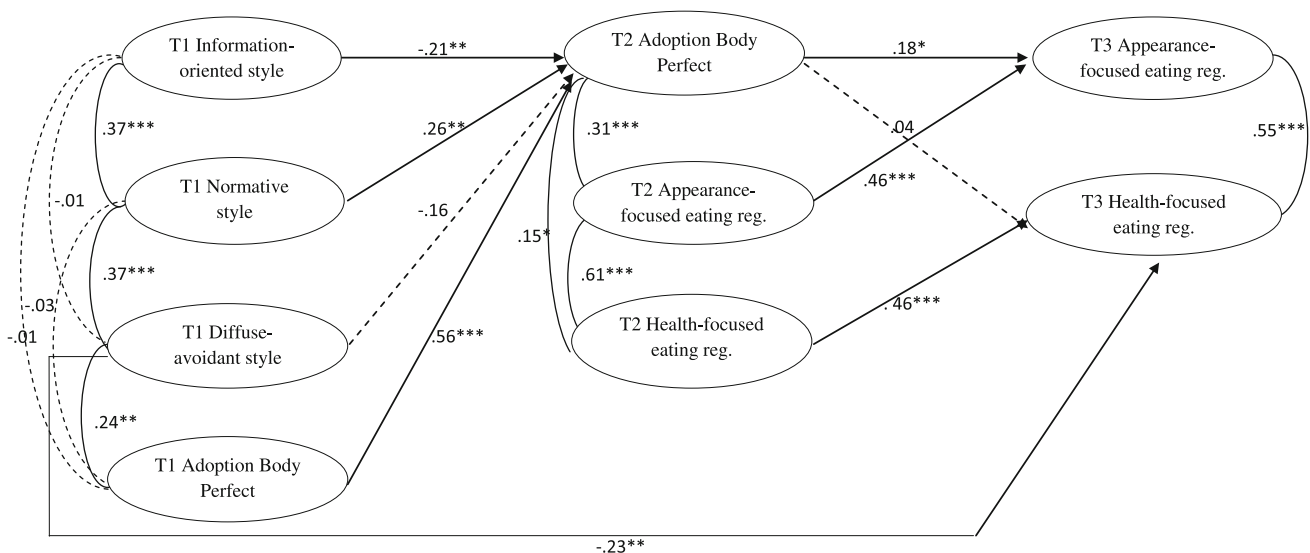
**Discussion**

The present study investigated the role of adolescents’ identity styles in adopting the body perfect ideal and eating regulation goals. Our results indicated that, depending on their identity style, some adolescents are more likely to increasingly adopt the body perfect ideal, at least in a Western society. This is problematic given that previous studies (Thompson and Stice 2001) indicated that adoption of the body perfect ideal can result in unhealthy and disordered dieting behaviors over time.

We found that the normative style predicted increases in adoption of the body perfect ideal. This result confirms the pattern of findings of Duriez et al. (2012), where the normative style predicted an increased focus on extrinsic goals, such as image, financial success, and fame. Presumably, as normative-oriented individuals are highly sensitive to societal expectations (Berzonsky 1990), they easily buy into the body perfect ideal because it is highly prevalent and valued in Western society. Also, their strong preference for structure and cognitive closure (Duriez and Soenens 2006; Soenens et al. 2005) may lead these youngsters to adopt the societal expectations concerning attractiveness in a rather rigid and mindless fashion, at the expense of a flexible and critical reflection on what they perceive as beautiful or attractive themselves. As the present study also reveals, the body perfect ideal is associated with an increasing focus on attractiveness as the goal for regulating eating behaviors. Especially for normative-oriented adolescents, who typically demonstrate high levels of self-control (Berzonsky and Ferrari 1996), this type of eating regulation may result in rigid and unhealthy dietary

restrictions. Future research could explore this possibility more in-depth.

The current study also identified one of the identity styles as a protective factor against the adoption of the body perfect ideal. That is, information-oriented adolescents, who typically adopt an open and introspective stance, were found to increasingly distance themselves from the body perfect ideal. This finding is in line with previous studies demonstrating that teaching young girls to think more critically about the thin-ideal results in a lower adoption of the thin-ideal (Stice et al. 2011b). It is also consistent with studies demonstrating that general self-determination, a psychological resource correlated positively with an information-oriented style (Soenens et al. 2011), functions as a buffer against sociocultural pressures (Kopp and Zimmer-Gembeck 2011; Mask and Blanchard 2011; Pelletier and Dion 2007). Apparently, adolescents who actively explore different life values and who weigh these against their own standards tend to question the body perfect ideal in current society. That is, they become more critical towards socially praised ideals of beauty. Possibly, these youngsters focus less on attaining extrinsic goals, such as physical attractiveness, but instead, pursue more intrinsic goals, such as close relationships, community contribution and physical health (e.g., Kasser and Ryan 1996). A number of recent studies indeed demonstrated significant associations between an information-oriented style and a relative preference for intrinsic goals (Berzonsky et al. 2011; Duriez et al. 2012). To the extent that information-oriented individuals do value the importance of physical appearance, they may develop a more personal stance towards physical attractiveness, which is perhaps



**Fig. 1** Structural relations between the identity styles at Time 1, adoption of the body perfect ideal at Time 2, and eating regulation goals at Time 3. Solid lines represent significant paths, whereas dotted lines represent non-significant paths. \**p* < .05; \*\**p* < .01, \*\*\**p* < .001



healthier and more realistic compared to the socially defined standards of attractiveness.

Based upon previous studies (Vartanian 2009; Wheeler et al. 2001, 2003), we hypothesized that especially the diffuse-avoidant style would relate to increases in body perfect adoption. Although we found that this style was associated with body perfect adoption concurrently, it did not predict changes in adoption over time. A possible explanation for this unexpected finding might be that adolescents with a diffuse-avoidant style avoid committing to any long-term goal, including extrinsically oriented goals such as the body perfect ideal. Such an explanation is in line with Duriez et al. (2012) who found the diffuse-avoidant style to be related to the pursuit of extrinsic goals only at the cross-sectional level. These findings can perhaps be accounted for by the observation that diffuse-avoidant adolescents often let themselves be guided by acute situational demands, presumably because they are more impulsive (Berzonsky and Ferrari 1996). As a result, they only may come to endorse a particular goal, such as the body perfect ideal, when facing the urgent necessity to make a particular identity choice. Experimental research, in which adolescents are forced to commit to a set of ideals, may examine these hypotheses in greater detail.

Another explanation for the lack of relationship between the diffuse-avoidant style and body perfect adoption over time can be found in the recent differentiation in the identity status literature between “carefree” and “diffused” diffusion individuals (Luyckx et al. 2008). The “carefree diffused” individuals do not explore any identities options at all and are not committed to any goal or value. Although youngsters in this status do not report low personal well-being (Luyckx et al. 2008) they recently have been found to display externalizing problems, including physical and relational aggression, drug abuse and the tendency to break societal norms and standards (Schwartz et al. 2011). Different from youngsters in the “carefree” diffusion status, those in the “diffused diffusion” status engage in some exploration, but they feel stuck in this process as they keep on ruminating about several identity issues. Youngsters in this status demonstrate low self-esteem and high depressive and anxiety symptoms (Luyckx et al. 2008). Therefore, especially the latter subgroup of diffused individuals may be at risk for adopting the body perfect ideal over time in an attempt to cope with their negative affect and feelings of incompetence that originates in their blocked exploration process. Given that the measurement of the diffuse-avoidant style does not allow us to differentiate between both “diffused” groups, we could not further investigate this hypothesis. Future research may want to examine this hypothesis.

Notably, some differences emerged between the correlational and longitudinal findings. First, the diffuse-avoidant

style was associated positively with adoption of the body perfect within time, but did not predict changes in body perfect adoption over time. In contrast, the normative and information-oriented styles were not associated with body perfect adoption within time, but influenced relative increases and decreases in body perfect adoption over time. These findings emphasize the importance of longitudinal studies in deepening our knowledge on the role of identity processes in adoption of the body perfect ideal. Second, some differences also emerged before and after controlling for the variance shared between the identity styles. That is, at the correlational level (i.e., without controlling for shared variance) the associations between the normative and information-oriented style at T1 and body perfect adoption at T2 did not reach significance while they did reach significance in the structural model (where their shared variance was controlled for). These findings are consistent with other studies (Smits et al. 2010) in which the predictive validity of the identity styles also has been found to increase once shared variance between the identity styles was controlled for.<sup>1</sup>

Further, it was found that adoption of the body perfect related to increases in appearance-focused eating regulation over time. This finding is in line with previous studies demonstrating that adoption of the body perfect ideal in Western society is associated with dieting efforts and unhealthy weight-loss strategies (Thompson and Stice 2001). Furthermore, the finding that appearance-focused, but not health-focused eating regulation is driven by adoption of the body perfect adoption, further emphasizes the qualitative distinction between both type of eating regulation goals. Indeed, previous studies indicated that appearance-focused eating regulation is grounded in body image concerns and is associated with negative outcomes such as bulimic symptoms. In contrast, health-focused eating regulation seems to be less detrimental as it is not necessarily driven by body image concerns and had no associations with disordered eating behaviors (Verstuyf et al. 2012a, b).

As for the relationship between the identity styles at T1 and changes in health-focused and appearance-focused eating regulation at T3, a trend emerged in which the normative and information-oriented styles were related indirectly to increases, respectively decreases, in appearance-focused eating regulation through adoption of the body perfect ideal. Although these indirect effects were only marginally significant, we would like to note that these effects were estimated quite conservatively. As such, the results are relatively consistent with the notion that body perfection adoption may play an intervening role in

<sup>1</sup> Note: In line with this reasoning, the prospective paths from the normative-oriented style and information-oriented style at T1 to adoption of the body perfect ideal at T2 were significant in a SEM-model equal to the SEM model presented in the results.

associations between identity styles and changes in appearance-focused eating regulation. Given that the current study was the first to examine these indirect associations, the model clearly is in need of replication. Further, we found a direct negative association between the diffuse-avoidant style and health-focused eating regulation, suggesting that diffuse-avoidant individuals come to regulate their eating pattern gradually less on the basis of health and fitness goals. This finding is in line with previous studies showing that diffuse-avoidant individuals adopt a self-serving orientation, thereby endorsing hedonistic values that emphasize personal enjoyment and pleasure over long-term goals (Berzonsky et al. 2011; Berzonsky and Ferrari 1996; Luyckx et al. 2010). Indeed, regulating eating behaviors to improve or maintain health requires considerable effort and energy, especially in an environment that advertises food that is rich in sugar and fat (Baumeister and Heatherton 1996). Therefore, diffuse-avoidant adolescents may turn away from eating healthily and, instead, indulge in easily enjoyable, yet highly sugared and caloric food.

Finally, no gender differences were found in the relationships between identity styles and adoption of the body perfect ideal. Given the paucity of studies on the potential moderating role of gender in the relationship between identity development and adoption of the body perfect ideal, more studies are needed before drawing more final conclusions. Further, the association between adoption of the body perfect ideal and eating regulation goals also appeared to be independent of one's gender. This might be partly due to the use of gender-adjusted measures. For instance, an adjusted version of body perfect adoption was used for male participants and dietary efforts were measured more broadly as "eating regulation" rather than "dieting". As a result, eating behaviors aimed at achieving the muscular ideals (e.g., eating more carbohydrates) also could be captured by this broader measure. In line with previous studies that made use of gender-adjusted measures (e.g., Vartanian 2009), our study confirmed that the observed pattern of relations applied across gender.

### Limitations

There were some methodological and conceptual limitations to our study. First, in terms of drop-out, only 60 % of the initial sample participated at T2 and T3. This was partly due to dropout from school or illness, but also because of administrative problems where codes could not be connected to the codes of the previous waves, for instance, because mistakes were made in generating the code (i.e., initials and birth date). Importantly, missing data analyses revealed data were missing at random, indicating no systematic loss of participants. Further, analyses using listwise deletion yielded quasi identical parameter estimates, which provides further confidence that the obtained results were

not biased by the dropout rate. Second, some of our measures had relatively low reliabilities (i.e., the measures of the normative oriented identity styles and adoption of the body perfect ideal at T1). Third, given that the identity styles were measured only once, we could not investigate whether (changes in) adoption of the body perfect ideal and eating regulation goals in turn related to changes in identity styles. As a consequence, bidirectional associations between the study variables could not be examined. It would be interesting for future research to examine, for instance, whether adoption of the body perfect ideals not only follows from a normative style but also further strengthens the use of a normative style. In the process of adopting the body perfect ideals people may become even more sensitive to social and societal expectations than they already were, thereby increasingly engaging in a normative approach to their identity development. Fourth, although we purposely opted for a fairly broad (and, hence, gender-adjusted) measure of eating regulation, we did not capture more specific behaviors such as fasting, binge eating, sporting, using laxatives, or doping. Doing so would have allowed us to investigate whether and how appearance-focused and health-focused eating regulation relates to these behaviors and whether gender differences would have been found in these associations.

Finally, the present study was limited to the identity process model. However, identity has many aspects and people usually have multiple views on themselves (Suh 2002). For instance, rather than focusing on one's personal identity processes, some researchers have examined people's collective identity and, more specifically, their ethnic identity (e.g., Phinney 1990), which also has been shown to relate to adoption of the body perfect ideals (Wildes et al. 2001). For instance, research has found that African-American women are less likely to adopt the thin-ideal and to display body image concerns and disordered eating behaviors compared to their White counterparts (Wildes et al. 2001). However, African-American women who enter predominantly White colleges seem to be at increased risk for adopting the Western White ideals of beauty, especially if they have a weak racial identity (Wildes et al. 2001). In future studies, a wider range of concepts related to identity could be included, such that interactions between the identity styles and one's ethnic identity could be investigated. For instance, African-American women with a normative identity style might be less vulnerable to adopt the Western views on beauty once they enter predominantly White schools, as they tend to make strong commitments early in life and are less open to changes in these commitments. In contrast, African-American women with a diffuse-avoidant style might more easily switch to the "new" norms in their environment and, therefore, be more at risk of adopting the White standards of beauty.

## Clinical Implications

Despite these limitations, we believe our study revealed some interesting findings that are also of clinical relevance. First, the current results suggest that adolescents may be guided towards a coherent and personal defined sense of identity. Adolescents can be stimulated to reflect about the goals and values that are important to them and about their personal life direction. Indeed, such “inner compass” might guide youngsters to pursue their own goals and values in life rather than to follow expectations mindlessly and to comply with societal pressures (Assor 2012). In line with this, experimental research has revealed that adolescents often mention intrinsic goals, such as building close relationships with friends and family, when they are invited to think about personally important goals (Crocker et al. 2008). Furthermore, these interventions were found to stimulate prosocial feelings and behaviors (Crocker et al. 2008; Thomaes et al. 2012). Also, brief interventions in which more intrinsic values, such as social connectedness, health and contributing to the society, are emphasized resulted in better grades, health and wellbeing (Vansteenkiste et al. 2006; Walton and Cohen 2011). Possibly, these very same brief interventions focusing on life goals and values may reduce youngsters’ risk of adopting the body perfect ideal.

In a more general sense, it seems important to create an environment in which adolescents feel free and supported to explore alternative identities. Research in college students has found that psychologically controlling parenting, in which parents use guilt and shaming to manipulate their children, predicts greater difficulties in making commitments and identifying with those commitments (Luyckx et al. 2007). Therefore, rather than pressuring adolescents to make choices as quickly as possible to establish a sense of identity, it seems important to stimulate them to reflect about their goals, values and future direction in life. This would guide them towards a more stable and coherent, but also self-defined, sense of identity (Assor 2012; Soenens and Vansteenkiste 2011).

Finally, in line with previous studies, our results suggest that adolescents can better be challenged to think critically about the current body perfect ideal (e.g., Stice et al. 2011a, b). They could be helped in defining physical attractiveness in a more healthy and attainable manner compared to the extreme thin or muscular ideal to which they are exposed. Such interventions could lower their adoption of the body perfect ideals and, in turn, result in less appearance-focused eating behaviors.

## Conclusion

The results of our study indicated that dynamics of personal identity development and, more specifically, adolescents’ style of identity exploration is longitudinally related to the

adoption of the body perfect ideal that, in turn, relates to increased appearance-focused eating regulation. Young adolescents who have the tendency to stick more rigidly to expectations and norms in their environment seem to be more at risk for developing a more problematic attitude towards beauty and eating. In contrast, young adolescents who actively seek out information and who have a critical and open stance towards information in their environment gradually distance themselves from the more extreme body perfect ideal and, therefore, are less likely to display eating behaviors aimed at attaining this ideal over time. The social environment may stimulate adolescents to reflect actively on their life goals and values such that they end up building a well-anchored internal compass, which serves as a resource against the exposure to the body perfect ideal. Possibly, such identity-grounded interventions could add to the effectiveness of intervention programs aimed at lowering the onset of disordered eating behaviors.

**Author Contributions** J.V. coordinated the project, conceived of the study, coordinated the data collection, analyzed the data and drafted and finalized the manuscript. S.V.P. helped in the interpretation of the data and in drafting and finalizing the manuscript. M.V. helped in the data collection and in drafting and finalizing the manuscript. B.S. helped in drafting and finalizing the manuscript. L.B. helped in the interpretation of the data and in drafting and finalizing the manuscript.

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